

-30-

CLAIMS:

1. A system for controlling insects, which system includes a substrate in the form of an elongate tape having thereon a plurality of target zones spaced apart at predetermined intervals along a first surface of the substrate, each target zone including an insect attractant and/or an insect control agent.
2. A system according to claim 1, wherein the substrate is wound into a reel or the like.
3. A system according to claim 1 or 2, wherein the first surface or a second surface is coated with an adhesive material.
4. A system according to claim 1 or 2, wherein the first surface or a second surface is manufactured from an abrasive material.
5. A system according to any preceding claim, wherein the target zone includes a laminate structure which includes the insect attractant and the insect control agent.
6. A system according to claim 5, wherein the laminate structure comprises an impermeable layer, the insect attractant layer, a semi-permeable layer and the insect control agent.
7. A system according to claim 5 or 6, wherein the impermeable layer is adjacent the substrate.
8. A system according to claim 5 or 6, wherein the substrate may be the impermeable layer of the

-31-

laminate.

9. A system according to any of claims 6 to 8, wherein the impermeable layer and/or the semi-permeable layer are applied using a hot melt adhesive slot coater machine.
10. A system according to any of claims 6 to 9, wherein the impermeable layer includes a polyester such as a polyester based film.
11. A system according to any preceding claim, wherein the insect attractant includes a chemical attractant, a food based attractant, a synthetic attractant, a visual attractant or a host based attractant.
12. A system according to claim 12, wherein the chemical attractant is selected from the following list:
Z-5-decenyl acetate, dodecanyl acetate, Z-7-dodecenyl acetate, E-7-dodecenyl acetate, Z-8-dodecenyl acetate, E-8-dodecenyl acetate, Z-9-dodecenyl acetate, E-9-dodecenylacetate, E-10-dodecenyl acetate, 11-dodecenyl acetate, Z-9, 11-dodecadienyl acetate, E-9, 11-dodecadienyl acetate, Z-11-tridecenyl acetate, E-1-tridecenyl acetate, tetradecenyl acetate, E-7-tetradecenyl acetate, Z-8-tetradecenyl acetate, E-8-tetradecenyl acetate, Z-9-tetradecenyl acetate, E-9-tetradecenyl acetate, Z-10-tetradecenyl acetate, E-10-tetradecenyl acetate, Z-11-tetradecenyl acetate, E-11-tetradecenyl acetate, Z-12-pentadecenyl acetate, E-12-pentadecenyl acetate, hexadecanyl acetate, Z-7-hexadecenyl acetate, Z-11-hexadecenyl acetate, E-11-hexadecenyl acetate, octadecanyl acetate, E,Z-7,9-dodecadienyl acetate, Z,E-7,9-dodecadienyl acetate, E,E-7,9-dodecadienyl acetate, Z,Z-7,9-dodecadienyl

-32-

acetate, E,E-8,10-dodecadienyl acetate, E,Z-9,12-dodecadienyl acetate, E,Z-4,7-tridecadienyl acetate, 4-methoxy-cinnamaldehyde, .beta.-ionone, estragole, eugenol, indole, 8-methyl-2-decyl propanoate, E,E-
5 9,11-tetradecadienyl acetate, Z,Z-9,12-tetradecadienyl acetate, Z,Z-7,11-hexadecadienyl acetate, E,Z-7,11-hexadecadienyl acetate, Z,E-7,11-hexadecadienyl acetate, E,E-7,11-hexadecadienyl acetate, Z,E-3,13-octadecadienyl acetate, E,Z-3,13-octadecadienyl
10 acetate, E,E-3,13-octadecadienyl acetate, ethanol, hexanol, heptanol, octanol, decanol, Z-6-nonenol, E-6-nonenol, dodecanol, 11-dodecenol, Z-7-dodecenol, E-7-dodecenol, Z-8-dodecenol, E-8-dodecenol, E-9-dodecenol, Z-9-dodecenol, E-9,11-dodecadienol, Z-9,11-
15 dodecadienol, Z,E-5,7-dodecadienol, E,E-5,7-dodecadienol, E,E-8,10-dodecadienol, E,Z-8,10-dodecadienol, Z,Z-8,10-dodecadienol, Z,E-8,10-dodecadienol, E,Z-7,9-dodecadienol, Z,Z-7,9-dodecadienol, E-5-tetradecenol, Z-8-tetradecenol, Z-9-tetradecenol, E-9-tetradecenol, Z-10-tetradecenol, Z-
20 11-tetradecenol, E-11-tetradecenol, Z-11-hexadecenol, Z,E-9,11-tetradecadienol, Z,E-9,12-tetradecadienol, Z,Z-9,12-tetradecadienol, Z,Z-10,12-tetradecadienol, Z,Z-7,11-hexadecadienol, Z,E-7,11-hexadecadienol, (E)-
25 14-methyl-8-hexadecen-1-ol, (Z)-14-methyl-8-hexadecen-1-ol, E,E-10,12-hexadecadienol, E,Z-10,12-hexadecadienol, dodecanal, Z-9-dodecenal, tetradecanal, Z-7-tetradecenol, Z-9-tetradecenol, Z-11-tetradecenol, E-11-tetradecenol, E-11,13-
30 tetradecadienal, E,E-8,10-tetradecadienal, Z,E-9,11-tetradecadienal, Z,E-9,12-tetradecadienal, hexadecanal, Z-8-hexadecenol, Z-9-hexadecenol, Z-10-hexadecenol, E-10-hexadecenol, Z-11-hexadecenol, E-11-hexadecenol, Z-12-hexadecenol, Z-13-hexadecenol, (Z)-
35 14-methyl-8-hexadecenol, (E)-14-methyl-8-hexadecenol,

-33-

Z,Z-7, 11 -hexadecadienal, Z,E-7,11-hexadecadienal,
 Z,E-9,11-hexadecadienal, E,E-10,12-hexadecadienal,
 E,Z-10,12-hexadecadienal, Z,E-10,12-hexadecadienal,
 Z,Z-10,12-hexadecadienal, Z,Z-11,13-hexadecadienal,
 5 octadecanal, Z-11-octadecenal, E-13-octadecenal, Z-13-
 octadecenal, Z-5-decenyl-3-methyl- butanoate
 Disparlure: (+) cis-7,8-epoxy-2-methyloctadecane,
 Seudenol: 3-methyl-2-cyclohexen-1-ol, sulcatol: -
 methyl-5-hepten-2-ol, Ipsenol: 2-methyl-6-methylene-7-
 10 octen-4-ol, Ipsdienol: 2-methyl-6-methylene-2,7-
 octadien-4-ol, Grandlure I: cis-2-isopropenyl-1-
 methyl-cyclobutanethanol, Grandlure II: Z-3,3-
 dimethyl-1-cyclohexanethanol, Grandlure III: Z-3,3-
 dimethyl-1-cyclohexaneacetaldehyde, Grandlure IV: E-
 15 3,3-dimethyl-1-cyclohexaneacetaldehyde, cis-2-
 verbenol: cis-4,6,6-trimethylbicyclo>3,1,1!hept-3-en-
 2-ol cucurbitacin, 2-methyl-3-buten-2-ol, 4-methyl-3-
 heptanol, cucurbitacin, 2-methyl-3-buten-2-ol, 4-
 methyl-3-heptanol, .alpha.-pinene: 2,6,6-
 20 trimethylbicyclo>3,1,1!hept-2-ene, .alpha.-
 caryophyllene: 4,11,11-trimethyl-8-
 methylenebicyclo>7,2,0!undecane, Z-9-tricosene,
 .alpha.-multistriatin 2(2-endo, 4-endo)-5-ethyl-2,4-
 dimethyl-6,8-dioxabicyclo>3,2, 1 !octane,
 25 methyleugenol: 1,2-dimethoxy-4-(2-propenyl)phenol,
 Lineatin: 3,3,7-trimethyl-2,9-
 dioxatricyclo>3,3,1,0!nonane, Chalcogran: 2-ethyl-1,6-
 dioxaspiro>4,4!nonane, Frontalin: 1,5-Dimethyl-6,8-
 dioxabicyclo>3,2, 1 !octane, endo-Brevicomin: endo-7-
 30 ethyl-5-methyl-6,8-dioxabicyclo>3,2, 1 !octan, exo-
 brevicomin: exo-7-ethyl-5-methyl-6,8-dioxabicyclo>3,2,
 1 !octane, (Z)-5-(1-decenyl)dihydro-2-(3H)-furanone,
 Farnesol 3,7-11-trimethyl-2,6,10-dodecatrien-1-ol,
 Nerolidol 3,7-,11-trimethyl-1,6,10-dodecatrien-3-ol,
 35 3-m ethyl ,6-(1-methyl ethenyl)-9-decen-1-ol acetate,

-34-

(Z)-3-methyl-6-(1-methylethenyl)-3,9-decadien-1-ol acetate, (E)-3,9-methyl-6-(1-methylethenyl)-5,8-decadien-1-ol- acetate, 3-methylene-7-methyl-octen-1-ol propionate, (Z)-3,7-dimethyl-2,7-octadien-1-ol propionate, (Z)-3,9-dimethyl-6-(1-methylethenyl)-3,9-decadien-1-ol propionate.

13. A system according to any preceding claim, wherein the attractant is in the form of a reservoir layer on the substrate.

14. A system according to claim 13, wherein the attractant is mixed with a carrier material so as to form the reservoir layer.

15. A system according to claim 15, wherein the reservoir is a solid material at normal operating temperatures.

16. A system according to claim 14 or 15, wherein the carrier material is a hot melt or pressure sensitive adhesive polymer, or a mixture of two or more such polymers.

17. A system according to claim 16, wherein the carrier includes Ethylene vinyl acetates (which is preferred), Hot melt adhesive mixes, Poly vinyl acetate (PVA) Poly vinyl chlorides (PVCs) and crossed linked acrylates.

18. A system according to claim 16, wherein the carrier material is a glue based mixture of Durotak glue (produced by National Starch) and Futura (produced by Beardo Adams).

19. A system according to claims 13 to 18, wherein the insect attractant is dispersed in the polymer mixture

-35-

so as to form the attractant reservoir.

20. A system according to claims 12 to 19, wherein the reservoir further includes a colour dye marker to visually confirm the distribution of the insect attractant.
21. A system according to claims 13 to 20, wherein the attractant is present in the reservoir in an amount 0.5 to 50% by weight of the reservoir, preferably 1 to 25% by weight.
22. A system according to claims 6 to 21, wherein the impermeable layer includes a vapour proof substrate, such as a polymer based film.
23. A system according to claims 6 to 22, wherein the semi-permeable layer permits controlled release of the insect control agent from the system.
24. A system according to any preceding claim, wherein the insect control agent is an insecticide.
25. A system according to any preceding claim, wherein the substrate acts as a control agent to provide a mass trapping type system.
26. A system according to claim 25, wherein an adhesive is attached to a surface of the substrate, the adhesive being arranged to trap the insect should it land on the substrate.
27. A system according to any preceding claim, wherein the insect to be controlled is the codling moth (*Laspeyresia pomonella*) and the control agent is Lambda

-36-

Cyhalothin.

28. A method of controlling insects in a defined area
which method includes providing one or more systems
5 for controlling insects according to any of claims 1
to 28, and positioning the systems throughout the
defined area.